

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A ~~switch~~ system configured to function as a layer 4 switch, the system comprising:

a layer 2 switch having a plurality of ports, wherein a third port of the plurality of ports is configured to be in communication with a client;

a first server configured to be in communication with a first one of the plurality of ports;

a second server configured to be in communication with a second one of the plurality of ports; ~~and~~

wherein the first server has a real IP address and a real MAC address;

wherein the second server has a real IP address and a real MAC address;

wherein the real MAC address of the second server and the real MAC address of the first server are different from one another;

wherein the first server and the second server share a virtual IP address and a virtual MAC address;

wherein the shared virtual MAC address is different from the real MAC address of the first server and different from the real MAC address of the second server;

wherein the shared virtual IP address is different from the real IP address of the first server and different from the real IP address of the second server;

wherein the first server and the second server are configured to provide the shared virtual MAC address responsive to an ARP request for the shared virtual IP address;

wherein each of the first server and the second server is configured to provide its real MAC address responsive to an ARP request for its real IP address

~~the first server and the second server configured to function with the layer 2 switch to cause the switch to operate as a layer 4 switch.~~

2. (Currently Amended) The ~~switch~~ system of claim 1, wherein the layer 2 switch is an ethernet switch.

3. (Currently Amended) The ~~switch~~ system of claim 2, further comprising an IP layer, a TCP layer and an ethernet layer are configured to operate in accordance with layer 4 switching protocol.

4. (Currently Amended) The ~~switch~~ system of claim 1, wherein only one of the first server and the second server can be an active server for accepting new connections from the client.

5. (Currently Amended) The ~~switch~~ system of claim 1, wherein ~~neither the first server nor the second server transmits data with the shared virtual MAC address via the layer-2 switch to a client or client server~~ the first server and the second server are configured to share a virtual IP address.

6. (Currently Amended) The ~~switch~~ system of claim 5, wherein each of the first server and the second server transmits data with its real MAC address via the layer-2 switch to a client

~~or client server the first and the second servers are configured to respond to an ARP request for the virtual IP address with a virtual MAC address.~~

7. (Currently Amended) The switch system of claim 5, wherein the only one of the first server and the second server can be an active server such that only the active server accepts new connections.

8. (Currently Amended) The switch system of claim 5, wherein at least one of the first server and the second server is a passive server such that the passive server drops all inbound packets having the virtual IP address with a SYN flag set.

9. (Currently Amended) The switch system of claim 5, wherein at least one of the first server and the second server is a passive server, the passive server continues to process a previously established session and does not establish a new session.

10. (Currently Amended) The switch system of claim 1, further comprising at least one server(s), wherein each one of the at least one server(s) is configured to be in communication with a different port of the plurality of ports.

11. (Currently Amended) The switch system of claim 10, wherein each of the at least one server(s) is configured to function with the first server, the second server and the layer 2 switch as a layer 4 switch.

12. (Canceled) The system of claim 11, wherein the first server, the second server and the at least one server(s) are configured to have a virtual IP address such that the virtual IP address is the same.

13. (Currently Amended) The switch system of claim 1 ~~44~~, wherein the only one of the first server, the second server and the at least one server(s) can be an active server such that only the active server accepts new connections.

14. (Currently Amended) The switch system of claim 13, wherein each one of the first server, the second server and each one of the at least one server(s) that is not the active server are passive servers.

15. (Currently Amended) The switch system of claim 14, wherein each one of the passive servers continues to process any previously established session and does not establish a new session.

16. (Currently Amended) The switch system of claim 14, wherein if one server of the first server, the second server and the at least one server(s) becomes configured to be a partially active server for a particular IP address, then the other servers of the first server, the second server and the at least one server(s) are configured to partially be passive for the particular IP address.

17. (Currently Amended) The ~~switch system~~ switch of claim 14, wherein the first server, the second server, and the at least one server(s) are configured to determine which server should be the active server.

18. (Currently Amended) The ~~switch system~~ of claim 14 wherein the first server, the second server, and the at least one server(s) are configured to communicate with each other via the layer 2 switch in order to determine which server should be the active server.

19. (Currently Amended) The ~~switch system~~ of claim 18, wherein the determination of which switch should be the active switch is based on a comparison of a metric associated with each server.

20. (Currently Amended) A method of creating a layer 4 switch comprising:

configuring a plurality of servers to each have a real IP address and a real MAC address, wherein the real IP address and the real MAC address of each of the plurality of servers is different from one another;

configuring the a plurality of servers to each have a ~~shared the same~~ virtual IP address, the shared virtual IP address being different from the real IP addresses of the plurality of servers;

configuring the plurality of servers to each have a ~~shared the same~~ virtual MAC address for the virtual IP address, the shared virtual MAC address being different from the real MAC addresses of the plurality of servers;

establishing a communication path between the plurality of servers and a layer 2 switch such that each one of the plurality of servers is configured to be in communication with a different port of a plurality of ports of the layer 2 switch;

configuring the plurality of servers to provide the shared virtual MAC address responsive to an ARP request for the virtual IP address; and

wherein each of the plurality of servers is configured to provide its real MAC address responsive to an ARP request for its real IP address ~~configuring the plurality of servers, in cooperation with the layer 2 switch, to operate collectively as a layer 4 switch, the layer 4 switch configured to be in communication with a client via one port of the layer 2 switch.~~

21. (Currently Amended) The method of claim 20, ~~further comprising wherein the step of configuring the plurality of servers, in cooperation with said the layer 2 switch, to operate collectively as a layer 4 switch comprises~~ establishing one of the plurality of servers to be an active server and configuring the remaining ones of the first server, the second server, and the at least one server(s) to be passive servers; the active server being configured to be able to set up new connections with the client.

22. (Previously Presented) The method of claim 21, further comprising the plurality of servers communicating with each other via the layer 2 switch at configurable intervals and determining whether the active server should remain the active server or whether another one of the plurality of servers should become the active server.

23. (Currently Amended) The method of claim 20, ~~further comprising wherein the step of configuring the plurality of servers, in cooperation with said the layer 2 switch , to operate~~

~~collectively as the layer 4 switch comprises~~ configuring each of the plurality of servers such that a TCP layer, an IP layer, and a layer 2 protocol acts as the layer 4 switch.

24. (Previously Presented) The method of claim 23, wherein the layer 2 switch is an ethernet switch and the layer 2 protocol is ethernet.

25. (Currently Amended) The method of claim 23, ~~further comprising wherein the step of configuring the plurality of servers, in cooperation with the layer 2 switch, to operate collectively as a layer 4 switch further comprises~~ establishing one of the plurality of servers to be an active server and configuring the remaining ones of the first server, the second server, and the at least one server(s) to be passive servers; the active server being configured to be able to set up new connections with the client.

26. (Previously Presented) The method of claim 25, further comprising changing the active server to a different one of the plurality of servers.

27. (Currently Amended) The method of claim 21, ~~further comprising wherein the step of configuring the plurality of servers, in cooperation with the layer 2 switch, to operate collectively as the layer 4 switch further comprises~~ configuring each of the plurality of servers such that a TCP layer, an IP layer, and a layer 2 protocol acts as the layer 4 switch.

28. (Previously Presented) The method of claim 27, wherein the layer 2 switch is an ethernet switch and the layer 2 protocol ethernet.

29. (Currently Amended) A switch comprising:
a plurality of servers, each server configured to have a shared virtual IP address that is the same and a configurable shared virtual MAC address for the virtual IP address;
a layer 2 switch having a plurality of ports, one of the plurality of ports being for communicating with a client;
a communication path between each one of the plurality of servers and the plurality of ports such that a subnetwork is created between the plurality of servers;
wherein the plurality of servers are configured to provide the shared virtual MAC address responsive to an ARP request for the shared virtual IP address;
wherein, responsive to receiving the shared virtual MAC address by the layer 2 switch, the layer 2 switch fails to associate an actual MAC address of the plurality of servers with at least one port of the plurality of ports causing the plurality of servers being configured to operate collectively with the layer 2 switch to broadcast data destined for the virtual IP address to each server of the plurality of servers so that the switch operates as a layer 4 switch; and
wherein only one of the plurality of servers is designated as an active server that establishes new connections with the client, the plurality of servers utilizing the subnetwork at configured intervals to aid in a determination of which server should become the active server.

30. (Previously Presented) The switch of claim 29, wherein the determination of which one of the plurality of servers should become the active server is based on a comparison of at least one metric of each one of the plurality of servers.

31. (Previously Presented) The switch of claim 29, wherein the plurality of servers, in combination with the layer 2 switch, are configured to establish an IP layer, a TCP layer and a subnetwork layer to act as a layer 4 switch.

32. (Previously Presented) The switch of claim 31, wherein the subnetwork is ethernet.